

# Leading Edge

Air Force Materiel Command

Oct - Dec 2004

War-winning capabilities  
on time...on cost page 9





## LEADING EDGE

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## mission focus

4 'DEMYSTIFYING' AFMC

## focus on sustainment

9 OUR DYNAMIC DEPOTS

## leadership changes

- 6 STEPPIN' UP
- 7 TOP AFMC CIVILIAN RETIRES
- 8 HAIL TO THE NEW CHIEF

## mission progress

- 12 GOING, GOING, GONE!
- 13 CLEANING UP WITH A 'BANG'
- 4 GOING WIRELESS
- 15 LEAN MEAN SUSTAINING MACHINE
- 16 HITTING THE MARK

## department briefs

- 3 MISSION BRIEFS
- 18 AFMC WARFIGHTERS
- 20 FEATURES
- 23 PEOPLE



*On the cover: Finding parts used to be like "an Easter egg hunt" for sheet metal mechanic Jaime DeLaRosa, left, who finds the new kitting system saving him time. Workers at Tinker Air Force Base, Okla., now create kits of all the parts or tools used to service a particular item, like an engine. Instead of searching through a huge supply room every time they need a part Mr. DeLaRosa, Mike Polach, and Larry Smith, from left, build a kit for a future project. (AF photo by Margo Wright)*

*The first of 23 B-1B Lancers to be regenerated takes to the Arizona skies, headed for its home base at Dyess AFB, Texas. (AF photo by Terry Vanden-Heuvel)*



## Return of the B-1B bombers

DAVIS-MONTHAN AIR FORCE BASE, Ariz. — Maintainers from two Air Force Materiel Command bases partnered in September to regenerate the first of 23 B-1B bombers initially set to retire that Air Force officials now want to retain.

Maintenance experts from the Aerospace Maintenance and Regeneration Center here and the 654th Combat Logistics Support Squadron from Tinker AFB, Okla., are taking the bombers out of retirement as called for in the House and Senate Fiscal 2004 Authorization Bill. The bill reverses Air Force plans to retire 32 of its 92 B-1B bombers by the end of the current fiscal year, instead retaining 23 of the aircraft slated for retirement.

After two months of flight preparations, the first B-1B departed Sept. 2, headed for Dyess AFB, Texas.

The Lancer entered storage at AMARC in April 2003. In early 2004, the Air Combat Command commander recalled the B-1Bs to supplement fleet requirements to support the Global War on Terrorism.

— AMARC Public Affairs

## And then there were three...

ROBINS AIR FORCE BASE, Ga. — In the next three years, the Air Force will reduce the number of oscilloscopes — a diagnostic tool to test avionics hardware — from 190 models to three to save money and material management resources.

Joseph Howard, deputy director of the Robins Support Equipment Commodity Council, a body that governs support equipment purchases, said the decision shifted the focus of support from products to capabilities.

“Instead of looking at buying individual products, we began looking at what these 190 different products actually measure,” he said. “We took a look at the measurements these oscilloscopes

made, and we said it looks like they fit into three categories. So, instead of using 190 different oscilloscopes, let’s focus on the measurement capability instead of the products and narrow our use down to three.”

Currently, the Air Force has an estimated 20,000 oscilloscopes in its inventory. It expects to add 600 within the next three years to be used as replacements as current items become obsolete, Mr. Howard said.

Rita Blair, support equipment commodity council director, said the new approach will serve the warfighter well, with less national stock numbers to be managed in the Air Force’s inventory system.

— WRALC Public Affairs



*Greg Bookhardt, a precision measurement equipment laboratory technician, calibrates a Lecroy digital oscilloscope, which is used to test equipment on plane and ground radar systems. (AF photo by Sue Sapp)*

## OPERATION: ENTERTAIN THE TROOPS



*Staff Sgts. Felita Rowe and Jeff Fischer, vocalists from the USAF Band of Flight’s “Systems Go” ensemble from Wright-Patterson, AFB, Ohio, rocked the house with troops in Uzbekistan this past summer. The band members are part of Air Force Materiel Command’s push for all its active-duty members to be deployment qualified. The push comes in the wake of the Air Force chief of staff’s vision of all airmen — including band members — to be deployment ready. AFMC deployed the “New Horizon” rock band from the USAF Band of Liberty at Hanscom AFB, Mass., in April followed by “Systems Go” in August. Members of all 14 USAF bands are assigned to an Air Expeditionary Force bucket like their service counterparts. AFMC funding allowed a complete rock band stage set up to be pre-positioned earlier this year so the equipment needed to perform is waiting for them in country. (AF photos by Master Sgt. Chris Ballard)*



### ★★★★★ Around the command Gen. Gregory S. Martin



# 'Demystifying' AFMC

## ALC reorganization fosters better alignment, communication

Since taking command of Air Force Materiel Command a little more than a year ago, I have worked with our headquarters leaders and center commanders to restructure our headquarters staff, product centers, and air logistics centers. I'd like to explain the rationale for our restructuring efforts then focus on our ALC restructure.

Just before I arrived at AFMC, the Air Force decided to realign Program Executive Officer responsibilities within our acquisition community. Before the realignment, PEOs were located in Washington and worked directly for the Assistant Secretary of the Air Force for Acquisition, better known as SAF/AQ.

Our product centers in AFMC — Aeronautical Systems Center at Wright-Patterson Air Force Base, Ohio; Electronic

Systems Center at Hanscom AFB, Mass.; and Air Armament Center at Eglin AFB, Fla. — supported the PEOs and SAF/AQ, but were organized separately and connected by "dotted line" to the acquisition structure.

The PEO realignment moved PEO responsibilities from Washington to our product center commanders who are now dual-hatted as commanders and PEOs. The ASC commander serves as the PEO/Aircraft; the ESC commander serves as the PEO/Command & Control; and the AAC commander serves as the PEO/Weapons and Munitions.

As PEOs, our product center commanders work directly for SAF/AQ. As product center commanders whose organizations provide acquisition support to SAF/AQ through AFMC, these commanders work

directly for me. So now, the organization responsible for the execution of acquisition programs, SAF/AQ, has a direct command line to AFMC through the dual-hatted PEO/Product Center commander.

I wanted to give you the background on the PEO realignment because it essentially drove much of the restructure actions across AFMC. It strengthened mission focus for our acquisition programs and provided us an opportunity to do the same in other areas of our command.

Mission focus across our Air Force revolves around the wing structure with its assigned groups and squadrons. Until now, AFMC was the exception. So, over the past year we reorganized our product centers into a standard wing structure, and we are well into phase one of our two-phased ALC restructure.

*Loggies at Ogden Air Logistics Center, Hill AFB, Utah, work on an A-10 Warthog. AFMC's three ALCs are part of a reorganization effort, which includes converting the current business-termed organizations to four standard Air Force wings: aircraft sustainment, combat sustainment, maintenance and air base. The ALCs are expected to be fully operational in their reorganized units by Jan. 1. (AF photo)*



When we complete the first phase of the ALC restructure on 1 Jan, each ALC will have a standard aircraft sustainment wing, combat sustainment wing, maintenance wing, and the existing air base wing. In addition to the four standard wings, Ogden ALC at Hill AFB, Utah, will have a separate intercontinental ballistic missile wing in recognition of its missile sustainment mission.

Let me say up front that workforce reductions have not been part of the discussion or plan for any of the ongoing command restructures, including the ALC restructure. We will have to realign some people and positions to support our new organizational construct, but there are no plans to reduce our workforce.

Several critical design factors drove our ALC and other command restructures.

First we wanted to strengthen support to operational commands and warfighters in the field. AFMC touches every Air Force major command in some way, and our ability to add value depends on our success in delivering war-winning capabilities on time and on cost. That's our number one job in AFMC — it's why we exist. And nowhere is it more important than in our ALCs where we sustain every weapon system in the Air Force inventory!

Next, we must continue supporting and maturing the PEO realignment. During the second phase of our ALC restructure, we will define and establish governance for when a weapon system formally transitions from an acquisition program to sustainment — and at that point the sustaining ALC commander will become the PEO for that system.

Another critical design factor is the need to structure AFMC similar to the way all other Air Force major commands operate — in a standard wing, group, squadron construct. Our new structure will make it easier for people in the field to deal with AFMC, to understand who does what, and to clearly know what organizations are responsible and accountable for mission performance. In the end, I believe the other major commands will gain a new respect and appreciation for the work AFMC performs while, at the same time, our people spend less time defending why AFMC is different.

Finally, our last critical design factor involves structuring the command with a capability-based versus platform-based focus. So, rather than having a more nar-

rowly defined organization focused on individual weapon system platforms like the KC-135

Stratotanker, B-52 Stratofortress, or C-5 Galaxy, we will transition to capability-based wings that focus on all platforms associated with a broad capability like long-range strike, fighter - attack, or strategic airlift.

The ALC restructure will also help us with the continuing transformation of our purchasing and supply chain management and depot maintenance missions.

Speaking of transformation, I am proud of the results achieved by our ALCs using Lean principles to improve work processes and functions, and I can assure you that our operational commands along with our Secretary and Chief of Staff of the Air Force appreciate your efforts as well.

In 2001, our command provided 64.5 percent of expected depot maintenance and spare engine work back to owning units on time. Today, 92.6 percent of our products are returned to operators on time!

The Oklahoma City ALC at Tinker AFB, Okla., reduced programmed depot maintenance time on tanker aircraft by nearly 50 percent — from 400 days in the past to 215 days today. OC-ALC also has more spare fighter aircraft engines available for maintainers worldwide than at any time in the past decade. At Ogden ALC, workers in the F-16 Fighting Falcon wing shop reduced workflow time from 64 to 27 days. Finally, workers at our Warner-Robins ALC, Robins AFB, Ga., reduced C-5 programmed depot maintenance flow days by more than two months — from 339 days to the low 200s!

In 2004, our organic depot workforce



*Todd Trodahl does a final balance on a C-130 Hercules propeller at Warner Robins Air Logistics Center, Robins AFB, Ga. Warner Robins and other AFMC ALCs are being reorganized to deliver warfighting capabilities on time and on cost. (AF photo by Sue Sapp)*

across the three ALCs produced 657 aircraft — eight more than our goal; and 406 engines — exactly what we promised!

I believe our ALC restructure when coupled with ongoing transformational efforts will produce even better results for our Air Force!

It's that kind of demonstrated teamwork and on time, on cost performance that will earn us respect in the eyes of our customers and Air Force senior leaders and ensure we achieve our vision: To be a valued team member ... of the world's greatest Air and Space Force.

Every one of you is a valued team member of this command, and we could not perform our critical missions in science and technology, acquisition support, test and evaluation, and sustainment without your day-in and day-out dedication and proven track record. I'm proud of you and proud to serve as your commander.



# Steppin' up

Meet AFMC's executive director

1st Lt. Tracy Page  
AFMC Public Affairs

**I**t was 1976 when a young intern, trembling with anxiety, walked into an office in the command section of Air Force Logistics Command at Wright-Patterson Air Force Base, Ohio. He'd been in the Air Force only two years, but was the subject matter expert on a logistics project the general wanted briefed in his office. The intern, so nervous he could barely speak, stumbled through his briefing to the one-star.

"Son, you really know what you're talking about," the general said after the logistics management intern had finished. "But you need to speak up!"

The young intern heeded that general's advice. Thirty years later, the intern, Robert J. Conner, calls that very office his own.

"I feel like I've come full circle in my career," he said. "I started right here at Wright-Patterson Air Force Base in 1974 and now in 2004 I'm back again."

In August, Mr. Conner replaced Dr. Daniel Stewart as the executive director of what is now Air Force Materiel Command making Mr. Conner the highest-ranking civilian in AFMC, equivalent to a three-star general.

As executive director, Mr. Conner advises Gen. Gregory S. Martin, AFMC commander, and helps implement General Martin's policies and programs across AFMC.

From the start of Mr. Conner's career the people of AFLC, which consolidated with Air Force Systems Command in 1992 to become AFMC, inspired him. Like most successful people, he has a passion for his work and respect for his co-workers.

"What struck me about this place immediately was the importance of the work that people do here, I was very, very impressed, and I didn't really have much knowledge about the Air Force or civil service at the time," he said. "What better job can you have than doing what our people do working in Air Force Materiel Command? Everyday the people in our command make a real contribution to the nation's defense."

In 30 years, Mr. Conner has learned a



*Robert J. Conner took over as AFMC's executive director in August. (AF photo by Dave Livingston)*

lot more about AFMC as well as its mission to provide war-winning capabilities, on time, on cost. He has a master's degree in logistics management from the Air Force Institute of Technology, here, and has worked extensively at air logistics centers on Warner-Robins AFB, Ga., McClellan AFB, Ca., and Tinker AFB, Okla.

More impressive than his long resume is Mr. Conner's concern for AFMC's people, as well as his commitment to change. As the executive director, he has three focus areas: union partnership, leadership development and command transformation.

No longer soft-spoken, Mr. Conner described his plans to develop a support network for AFMC employees, transform the command into a leaner, more effective force and encourage the (Gen. Henry "Hap Arnolds" of tomorrow.

A partnership agreement between AFMC and the American Federation of Government Employees will be one of Mr. Conner's priorities.

"I was on the partnership council as a representative before coming to this job so I have some familiarity with how it works.

I think that it's very important for the command and I want to try to nurture and grow the partnership agreement," he said.

Mr. Conner explained the partnership council's primary goal. "The AFMC and the AFGCE council have agreed to a labor management partnership, and under that partnership arrangement we try to deal with issues that are of common interest and try to find cooperative solutions to those issues for the betterment of the command and the people who work in the command."

AFMC has the highest percentage of civilian employees of all the Air Force's major commands — that's one reason why the executive director position exists. Mr. Conner is concerned with the welfare of the command's civilian workforce and union relations, but his concern for AFMC's people extends beyond civil service: He wants to develop leaders among the command's diverse military, civilian and contract workforce.

"I intend to be directly involved with the development of our people. I think that it's extremely important that we, as senior leadership, spend a great deal of time thinking about the future and the people that we're going to need to lead the command in the future," he said. "The responsibility is ours to make sure that we develop people to step up and assume that role."

Mr. Conner believes a good template for leadership is the Air Force core values: integrity first, service before self and excellence in all we do. While it is important to develop one's own abilities to lead, Mr. Conner also thinks that it is crucial to pay attention to the vision of current leadership.

"There's a responsibility on the part of the people in the organizations to work hard to understand what needs to be done and what change is expected of them: Get on board and make it happen," he said. "It's not just about leadership; it's also about followership. It's within every one of us to be a leader in that sense."

Mr. Conner took his lead from Gen. Martin with the last of his focus areas, transformation. Just as he advises the workforce to do, he, too, is an active supporter of the vision.

Mr. Conner considers transformation to be the most challenging of his goals. He sees areas where people have already stepped up to the challenge, but he isn't afraid to speak up and say that the command needs to speed up the pace.

# Top AFMC civilian retires

Tech. Sgt. Carl Norman  
AFMC Public Affairs

**A**ir Force Materiel Command's first-ever civilian executive director retired Sept. 3, ending more than three decades of Air Force civilian civil service.

Dr. J. Daniel Stewart retired a member of the government's Senior Executive Service, in a grade equal to a military three-star general. Robert Conner, executive director for the Oklahoma City Air Logistics Center at Tinker Air Force Base, Okla., will take on the AFMC executive director duties.

In his career, Dr. Stewart has served in many mid-level and executive positions, including Air Armament Center executive director at Eglin Air Force Base, Fla.

He's also tallied several awards and honors including two Presidential Meritorious Executive Rank and Presidential Distinguished Executive Rank Awards. The president awards these annually to a small percentage of government senior-level executives.

The Savannah, Ga., native started his federal service in 1974 as a technology manager with the Air Force Rocket Propulsion Laboratory at Edwards Air Force Base, Calif. He became AFMC's civilian executive director in 1999 and has spent the last five years as a deputy to the commander in managing the command's mission.

Watching B-47 Stratojets that had taken off from nearby Hunter Air Force Base, Ga., and seeing echo satellites in the Georgia night skies on his family's farm led the young Dr. Stewart to Air Force civil service.

"Between airplanes and space, I knew that's where my



*Dr. J. Daniel Stewart updates his calendar for his final few days as Air Force Materiel Command executive director. (AF photo by Tech. Sgt. Carl Norman)*

heart was," he said.

From the Georgia farm, he went to the Georgia Institute of Technology to get his bachelor's degree in aerospace engineering. He also received his master's degree and doctorate in the same subject from the same university. Later, he attended Stanford University as a Sloan Fellow where he received his master's degree in business.

Fresh out of Georgia Tech, Dr. Stewart worked for Aerospace Corp. — a federal contract research center supporting space and missile systems organizations. He worked as a systems engineer on a number of space and ballistic missile systems.

"While in that role I saw better ways to do the job than what I was being tasked to do," he said. "So, I decided I wanted to be on the government side to shape what needed to be done rather than merely be on the receiving end."

So when the opportunity came to join the civil service, Dr. Stewart decided to leave The Aerospace Corp., and side with the government. The rest, as they say, is history.

He helped shape the first generation of smart submunitions, technology that led to the weapons dropped on Iraq. He also helped study missile signatures that led to improvements in the early warning missile detection systems being used today.

And then there was work he did toward a little-known technology called Program 621B, something that would eventually become known as the Global Positioning System.

"From being on the front end of those technologies to seeing how they're being used today is really satisfying," Dr. Stewart said. "I would have never imagined that those early programs would have the impact they're having today."

But despite all the success

with technical programs, he said he's equally proud of the chance to help shape how AFMC and the Air Force grows future leaders and how AFMC handles its labor management issues through partnership. AFMC's partnership has won Air Force level awards and serves as a model for other Air Force and Defense Department agencies to follow.

"I think during the past few years the leadership in this command has recognized that the unions are as much a stakeholder in what we do as are government employees, industry, Congress and a number of others," he said.

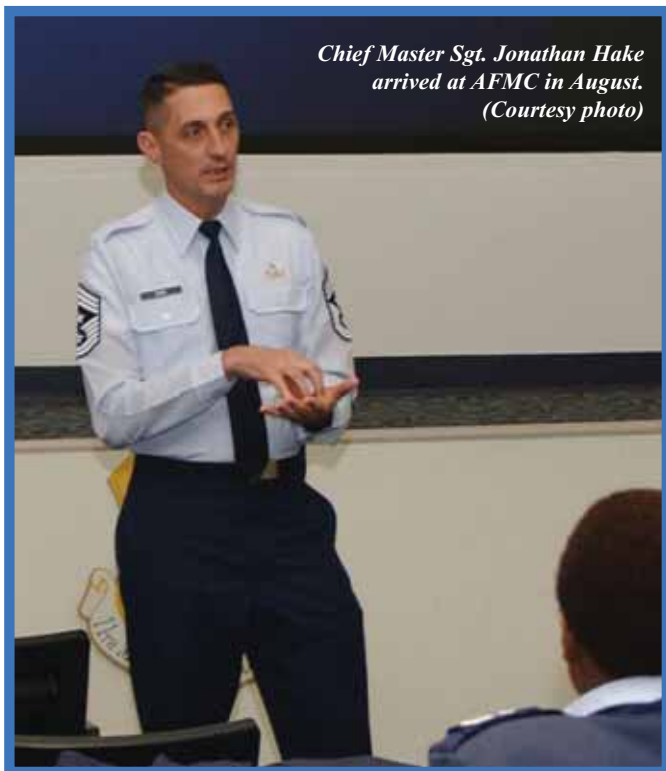
"Since they are a major stakeholder, we must partner with them just as we do with industry, our customers or our suppliers. By partnering we can start focusing our energies on taking care of the people. If we take care of the people, they'll take care of the mission."

Looking toward post-retirement life, Dr. Stewart said he's going to enjoy spending more time with his wife and traveling a little.

He said he's leaving with confidence because one of the things the Air force does well is develop its future leaders. With that, he offered some advice to future civil servants.

"The Air Force provides an opportunity to do a wide spectrum of things depending on what your interests are," he said. "Find out what you like to do and take advantage of those opportunities to do those things and do them well."

With any luck, he said, "you'll most likely have the kind of career I've had during the past 30 years and that's to do things I never dreamed I would have the chance to do. It was an exciting frontier, and what a great ride I've had."



*Chief Master Sgt. Jonathan Hake  
arrived at AFMC in August.  
(Courtesy photo)*

# HAIL

## *to the new chief*

Tech. Sgt. Carl Norman  
AFMC Public Affairs

**T**otal commitment to the people and mission are what Air Force Materiel Command's next command chief master sergeant says he'll bring to the fight as he takes on his duties this month.

Chief Master Sgt. Jonathan Hake, who comes to AFMC after nearly two years as command chief for the 11th Wing at Bolling Air Force Base, D.C., succeeds Chief Master Sgt. Vickie Mauldin who retired Aug. 20.

The York, Pa., native has seen permanent duty at bases in Germany, Greece, Korea and Japan as well as eight states, including two tours with the White House Communications Agency in Washington, D.C. He also deployed for 98 days to King Abdul Aziz Air Base, and 128 days to Prince Sultan Air Base, both located in the Kingdom of Saudi Arabia.

This broad background of service around the world is what Gen. Gregory S. Martin, AFMC commander, said led him to select Chief Hake for the command's senior enlisted position.

"Chief Hake is confident, yet unpretentious, and he connects with people quickly," General Martin said. "He'll be able to speak with credibility to the full spectrum of professionals we have in the Air Force Materiel Command."

The new command chief said he's not that knowledgeable about what AFMC does, but he's committed to learning and doing all he can to help move the command forward.

"I'll try to take care of the people regardless of where I am," he said. "Many people who have worked with me in the past often wonder why I'm not in the office any more than I am; it's because

I'm out listening to what people are saying so I can share their perspective with the commander."

The chief said he operates with three main themes when it comes to leadership and performance, all values he's held since his basic training days more than two decades ago. First, is knowing the value of teamwork.

With the diversity that comes with today's workforce, he said it's vital to know what each individual, regardless of rank or duty status, brings to the fight.

"I believe people must be competent, committed and caring," he said. "They must thoroughly know their specialty, passionately devote total talent and energy to all tasks big and small and know people professionally and personally. That, I promise, is what the men and women of AFMC will get from me."

He also said mentoring is a vital ingredient in the recipe for success in this area.

"It's vitally important that all members of our team, from the most junior enlisted person to the most senior officer or civilian, understand how what they do contributes to our ability to fly, fight and win," he said. "Supervising and leading America's sons and daughters are awesome responsibilities. They're a sacred trust and essential to our every success."

From arranging shoes from tallest to shortest and folding underwear in 6-inch squares in basic, the chief said paying attention to detail is a must and his second point.

"Take the time to scrutinize your work so you do the job right the first time," he said.

That plays into his third point of giving 100 percent to all tasks.

"One may not always be perfectly matched skills wise to an assigned task or understand what's being asked of you, but we must always do our level best under the circumstances," he said.

Chief Hake's military career started in June 1978 when he completed basic training and initially went to communications technical school at Keesler Air Force Base, Miss. But his is a story of an Airman that almost wasn't.

"I came very close to joining the Navy," the chief said. "They guaranteed many incentives to enter the electronics or nuclear ratings, but after a while I realized these would be primarily at sea on a surface ship or submarine.

"I quickly said thank you very much and stopped in to see the Air Force recruiter who made no specialty promises (entered open electronics) or any accelerated promotions. I was simply happy to have an opportunity to leave Pennsylvania and see the world. Mom signed the paperwork so I could join at 17 years old."

He continued in the communications field until taking on the command chief moniker in October 1999 as the Eleventh Air Force's senior enlisted leader at Elmendorf Air Force Base, Alaska. And he said it's the simple joy of working with people and making a difference that keeps him going.

"I was inspired by people like my military training instructors, Staff Sgt. Barry W. Cornell and Sgt. Thomas E. Soper, first section NCOIC, Tech Sgt. Mike Beaghan and Chief Master Sgt. Kevin Estrem, my senior enlisted adviser when I was selected for promotion to chief master sergeant, and countless other supervisors and leaders throughout my career," he said. "They were all great role models.

"From basic training to the present, I have been so fortunate to be associated with so many outstanding Americans from across this great land, and I'm very much looking forward to working with everyone in AFMC."



*Jimmy Trueblood pulls on gloves and protective gear before painting KC-135 rud-devators (part of the refueling boom) in one of the new Composite and Bomber Sheet Metal branch's paint booths at Tinker AFB, Okla. The new booths are part of a process improvement initiative designed to reduce flow days and get weapons systems back in the hands of the warfighter. (AF photo by Margo Wright)*



# introducing our Dynamic depots

LeeAnn Mohajerin  
OC-ALC Public Affairs

**W**hat is old is new again. At least that is the case for many of the Air Force's weapons systems.

Aircraft born as early as the '50s are not only seeing action in today's high tech wars but will continue in wars decades from now as the Air Force finds new uses for systems that have already exceeded their original design life.

As veteran airframes such as the B-52, KC-135 and E-3 Sentry find their service extended as far as 2040, the challenges of sustaining them falls to the Air Force Materiel Command's three air logistics centers.

While age may have its privileges, it also has its problems.

Plagued with under funding in the '80s and '90s, antiquated parts, corrosion and limited part sources, many of these programs fell behind. nonmission capable rates soared, along with backlogs and program depot maintenance costs.

Now maintainers of these aging aircraft find themselves looking at old problems in new ways — with much touted success. By incorporating a multi-faceted approach that includes better forecasting, process improvement and partnering with industry,

the command is making huge strides to successfully deliver war-winning capabilities — on time and on cost.

## Forecasting

The B-52's Aircraft Sustainment Roadmap is a powerful example of what a proactive approach to depot maintenance can do.

Once destined for the aircraft boneyard, the Air Force breathed new life into the B-52 program in 1999 when it announced plans to not only sustain the formidable bomber but upgrade it for 40 more years of service.

Saving the airframe from the brink of extinction was no easy task, according to Luke Burke, then Oklahoma City Air Logistics Center's B-52 System Program Office chief engineer.

"Through most of the '90s, the plan was to retire the B-52, so the sustainment program wasn't forward looking," said Mr. Burke. "We were out of a lot of parts; our sources were out of a lot of parts. Manufacturers had heard the story that the B-52 was going to retire, so they gave up those capabilities and we were at the end of the life expectancy on a lot of essential parts of the aircraft."

Their solution rested with a long-term sustainment plan so successful it earned the bragging rights of taking the oldest airframe and driving it to the highest mission capable rate in the combat Air Force during recent operations in Afghanistan and Iraq.

Described by Mr. Burke as the “most complete and comprehensive nose-to-tail evaluation process in the Air Force,” it is the work of an integrated product team made up of the B-52 System Program Office, Boeing, Air Combat Command, the Defense Logistics Agency and others.

It is a step-by-step process that sums, sorts and analyzes data to decide which system gets the most immediate attention. The analysis includes everyone from the field maintainers, operators, engineers, item managers, program depot maintenance specialists as well as several legacy systems including the Reliability and Maintainability Information System, the Air Force Total Ownership Costs and Aerospace Maintenance and Regeneration Center.

“We look at drawings, we tear down parts, we identify life expectancies,” said Terry Lucas, Boeing sustainment specialist. “Once the data is combined and sorted, we rank each system worst to best. Then we determine whether the problems are a logistics, engineering, source or

manufacturing issue.”

So far, the team has sustainment recommendations identified through 2016 enabling them to focus on parts availability, maintenance instructions and new PDM processes.

“With this system, we are able to find sources, get the parts produced and have them available before the problem affects the B-52’s ability to complete its mission,” said Mr. Burke.

The fruits of their labor were most evident in Operations Enduring Freedom and Iraqi Freedom, where more than half of the fleet deployed.

“The Air Force used the B-52 more than any other bomber and they flew them hard and heavy,” said Chief Master Sgt. Timothy Finch, B-52 Weapons Systems Team superintendent, Langley Air Force Base, Va. “If we didn’t have the roadmap, our maintenance approach would have been a lot more haphazard and we would have run into a lot more flight stoppers.”

### Process improvement

As parts procurement and backlogs become a thing of the past, centers realize the need to transform the old ways of PDM into something leaner and more efficient. That is the motivation behind the massive shop floor overhaul at Tinker

Air Force Base — an initiative already proving its worth.

Teams are charged with the painstaking process of following a part through each and every step within the PDM line. The idea is a simple one — try to reduce the amount of times a part changes hands and the number of miles the part travels from one process to another.

Lean also reduces waste by centering supplies and tools around the workers through more efficient work stations and total component management system or kitting.

Now, according to Art Benjamin, American Federation of Government Employees steward, mechanics can spend less time collecting parts and more time turning wrenches.

“This initiative is bringing everything back to the point of use for workers, which means less down time as far as the mechanics being out of the work station,” Mr. Benjamin said. “They don’t have to wait on parts and it’s allowing the workers on the floor to accomplish their tasks.”

Officials are so pleased with results, the OC-ALC Transformation Office is setting the wheels in motion for a \$500 million, 10-year contract that will see the lean and cellular initiative spread across 44 maintenance facilities and 6 million

*Shaft Shop machine tool operator Uriah Kesner shows Gen. Greg Martin, AFMC commander, an F100 high pressure turbine nut during the commander's June 28 visit to Tinker AFB, Okla., where he helped Lean out the part's PDM process. (AF photo by Margo Wright)*







*OC-ALC jet engine mechanics James Knoles, back, and Greg Moeller are part of a team chosen to work with Pratt & Whitney on the F119 engine that powers the F/A-22 Raptor. The workload is part of Pratt & Whitney's partnership with the center to create an F119 heavy maintenance facility at Tinker AFB, Okla. (AF photo by Margo Wright)*

square feet of industrial space. Improvements in those areas where lean and cellular are already in place have experienced an average of 50 percent gains whether measured in flow days, amount of inventory, work in progress or throughput.

The TF33 Shop that produces engines for the B-52, KC-135 and E-3 Sentry reduced backlogs and freed up approximately 26,000 square feet of floor space valued at \$9 million dollars.

Another shop that overhauls the constant speed drive is producing nearly twice as many parts per month, reducing its backorders by more than half and eliminating mission-capable aircraft awaiting these parts altogether.

On the KC-135 PDM line, workers went from a process that took 400 days per aircraft to a process that is expected to take 178 by fiscal year 2005, significantly reducing the number of depot-possessed aircraft from 176 to the low 70s at all three centers.

With a 2:1 return investment for every business unit complete, AFMC Commander Gen. Greg Martin said he is very enthusiastic about the future.

"It's the kind of thing that inspires the work force, makes them more productive and in the end gives our Air Force greater availability to the weapons systems and capabilities that we need more and more of in this world we live in."

## Partnering with industry

As organizations face budget crunches at a time when aging aircraft cost are on the rise, lines between private and government industry are becoming less defined.

As doing more with less becomes a common theme among organizations, the idea to share resources is becoming a popular one. In fact, units at Tinker are partnering with several original equipment manufacturers.

Technical issues and part sources for antiquated parts threatened the viability of the F110 engine. Now, a partnership between the engine's manufacturer, General Electric, and the center is enabling the Air Force to extend the engine until 2025.

Under a strategic alliance, GE is now involved at the ground level — as an integral part of the problem-solving team.

Because GE has access to original drawings and specifications, they can make more realistic lead times for replacement parts and materials. They can also help find new sources and reduce the burden on maintenance personnel, said John Pollock, Engine Division section chief.

Other private companies are taking it even a step further. Pratt & Whitney, for instance, invested \$7.5 million to move a special technology coating operation within the walls of the OC-ALC. An arrangement so successful it earned the Aviation Week Charles B Ryan Maintenance, Repair and Overhaul Award.

According to Jennifer Abel, partnering lead for the Propulsion Directorate, this type of partnership is a win-win situation.

"Tinker benefits from the new technology being brought on site, and Pratt & Whitney benefits by integrating their operations within a world class maintenance facility," she said. "Ultimately, the warfighter benefits because co-locating our operations and sharing best practices will reduce component repair time and overall program costs."

OC-ALC Commander Maj. Gen. Terry Gabreski agreed.

"We are combining the best of our organizations to provide the most effective capabilities possible for our ultimate customer, our warfighters," she said.

These and other efforts are not going unnoticed. During a recent Air Force Association Air & Space Conference, Gen. Martin lauded the work being done.

"Last year and this year, for the first time on record, we've not delivered a bill at the end of the year and our production rate on aircraft is about 93 percent on time.

"Ours is a command of which the entire Air Force rides, they ride on the backs of the men and women of AFMC and it is a great organization," he said. "We are a military organization with people who care about getting the war winning capabilities to the warfighter on time and on cost."

# Going Going Gone!

1st Lt. Brooke Davis  
AFFTC Public Affairs

*An Army Stryker Engineer Squad Vehicle equipped with a Mobile Gun System, or MGS, is extracted from a C-17 Globemaster from the 418th Flight Test Squadron, Edwards AFB, Calif. The C-17 Combined Test Force successfully airdropped the MGS on Roger's Dry Lake Bed in August. (AF photo by Kevin Kidd)*

A recent flight test at Edwards Air Force Base, Calif., exemplifies how the Air Force Materiel Command base is forging into new flight test territory by assisting the other military branches, including the U.S. Army.

Among the latest testing done at Edwards AFB, the C-17 Combined Test Force — for the first time — successfully airdropped a Mobile Gun System, or MGS, that fits the Army's Stryker Engineer Squad Vehicle during a feasibility test Aug. 13.

The Army is testing the 52,500-pound MGS to possibly equip the armored vehicle to meet current operational needs of the 82nd Airborne Division, Fort Bragg, N.C. Testers at Edwards AFB airdropped the Stryker on the south part of Roger's Dry Lake Bed.

"There is a present need to have airdrop capability for the mobile gun system, and we performed the feasibility test to see if the impact of an airdrop is consistent with static impact testing the Army has already completed," said Alec Dyatt, 418th Flight Test Squadron C-17 CTF flight test engineer.

Prior to the airdrop, the Army performed Static Airdrop Impact Tests in order to build a honeycomb cargo carrier for the MGS to absorb energy generated by a 12-foot drop, explained Mr. Dyatt.

The purpose of the feasibility airdrop was to verify if the extraction system was adequate, demonstrate the system could be extracted safely and verify there was sufficient clearance in the C-17 for the payload to be extracted, said Dan Jones, 418th FLTS Boeing mission systems engineer.

"We built up to this test by dropping a cargo container that contained steel plates with the same mass properties as the Mobile Gun System Wednesday [Aug. 11]," said Mr. Jones.

The cargo container is equipped with 10 100-foot diameter parachutes that allow the container to hit the ground with the same force as if it had been dropped from 12 feet off the ground, explained Mr. Jones.

"The next step after the feasibility test is to have the Stryker vehicle undergo full developmental testing, which will conclude

when the Army performs three operational extractions," said Maj. Landon Henderson, 418th FLTS C-17 test director and test pilot.

Developmental testing here will include: jettison testing to determine the maximum allowable height of a fully-rigged platform, extraction package deployment characteristics testing designed to determine if the vehicle's 105-mm gun barrel will interfere with the deployment sequence, and dropping sequential Stryker vehicles on the same airdrop pass, said Major Henderson.

In addition to the Army test completed here, the members from the Joint Strike Fighter Integrated Test Force are bedding down to prepare for a fast-paced testing schedule. The Joint Strike Fighter Integrated Test Force at Edwards AFB completed its first step of testing June 17 by flying an early risk reduction pod equipped with three sensors, which will eventually be used by the F-35.

Testers loaded the ERR pod, equipped with an array of infrared sensors known as the Distributed Aperture System, or DAS, onto an F-16 for the initial tests. The JSF Integrated Test Force consists of testers from the Navy, Air Force, Marines and allies.

Along with the international and multi-branch JSF test force, the X-45A J-UCAS team is part of a joint DARPA, Air Force Flight Test Center and Navy effort with Boeing and NASA Dryden. Recently, the J-UCAS team completed the first-ever coordinated UAV flight Aug. 1.

During the 55-minute flight in Edwards' airspace, the two UAVs, laterally separated by two miles of airspace, joined up in a pre-programmed formation and flew autonomously while supervised by an operator.

Testing continues at Edwards AFB to support the warfighter overseas, and members from testing organizations like China Lake Naval Air Warfare Center, Calif., Army and NASA continue to partner-up with AFMC in order to efficiently develop and advance technologies' current capabilities.



# Cleaning up with a 'BANG'

1st Lt. James Madeiros  
96th ABW Public Affairs

In an open field at Eglin Air Force Base, Fla., an assortment of presumably inert ordnance lay in organized rows, gathered together for removal after having been dropped for various test missions.

"We have to verify that the ordnance is inert," said Staff Sgt. William Kellum, 96th Civil Engineer Squadron explosive ordnance disposal craftsman.

The munitions, MK-82 and MK-84 unguided bombs, AGM-130 rocket motors and sea mines, have been dropped during various test missions, and are likely empty of fuel or filled with concrete. Before they can be removed, however, their noses and tails must be "popped" to expose their insides and guarantee safety during removal.

This type of test area cleanup mission takes place once or twice a year, said Tech. Sgt. Robert Walker, 96th CES EOD craftsman. On this particular mission, training will be incorporated during the cleanup for newer EOD apprentices on the team.

"It's important for these guys to see how

this stuff works, and what it will do," said Sergeant Walker.

The "stuff" used by EOD technicians may seem out of the ordinary for some, such as C-4 plastic explosives, dynamite, shape charges, blasting caps, detonation cord and other volatile items, but it is part of a normal workday for these Airmen. Despite the focus necessary when using tools like these in a dangerous career field, the apprentices understand the impact their work is having on the Eglin mission.

"We keep planes flying," said Adam Cole, 96th CES EOD apprentice. "We keep the base operating by clearing unexploded ordnance."

Packed in wooden crates that are banded and clasped in metal that must be sheared off, explosive material is handled with care. Shape charges come in different shapes and sizes, and are made with C-4 or a similar type of malleable explosive material. The various shapes help direct the blast of the material once it is detonated. Unshaped, C-4 is a white, puttylike substance that comes in brick form.

When using explosives of this type,


planning and preparation are critical on the range to ensure safety and avoid delaying a mission. Explosions can often be volatile, so airspace is also cleared in the area of detonation. That means EOD personnel must be timely in their setup and execution.

"In a two- to three-hour window, we can clear 80 to 100 bombs," said Sergeant Walker. "This time, we have about 70 bombs that must be popped."

Once the munitions and motors have been split open to reveal they are empty of fuel or only filled with concrete, range personnel collect the material for reconstitution through the Defense Reutilization and Marketing Office.

"We must turn these munitions into DRMO," said Sergeant Walker. "It is an Environmental Protection Agency requirement."

In this way, EOD technicians are both helping to ensure range safety and keeping in step with environmental regulations, which ultimately contributes to an uninterrupted mission schedule.



(From left) Airmen 1st Class Christopher Lewis, Adam Cole and Daniel Garrett cut and place C-4 plastic explosives onto ordnance to be "popped," while Tech. Sgt. Robert Walker cuts and places shape charges in the background. (AF photo by 1st Lt. James Madeiros)





*Members of a joint Air Force and Navy program office, managed by the Electronic Systems Center at Hanscom AFB, Mass., are working on designs for a new fully interoperable radio that will be used on current aircraft such as the Airborne Warning and Control System platform shown here, and future air frames. The JTRS program is ultimately expected to produce about 13,000 radios that will be used in every aircraft, every ship, and in every ground station. (AF photo by Staff Sgt. Jason Gamble)*

# Going wireless

Daryl Mayer  
ESC Public Affairs

**T**he future of military wireless communications took a giant step forward with the recent award of two contracts for preliminary system development and demonstration of the Airborne, Maritime and Fixed Station Joint Tactical Radio System.

The contract awarded Sept. 8 to the Boeing team is valued at \$54 million, while the contract awarded to the Lockheed Martin team was for \$51 million.

AMF JTRS is one of four Department of Defense programs charged with producing a family of software-defined radios capable of interoperating with all U.S., Allied and Coalition forces' legacy radios as well as with all JTRS radios. While other programs are geared to produce handheld or vehicle-mounted variants, the AMF program managed by ESC is specifically tasked with producing radios for air-

borne and maritime platforms and fixed ground stations, according to Lt. Col. Maryann Watson, AMF JTRS program manager.

Ultimately, the AMF program's goal is to produce approximately 13,000 radios for worldwide use. JTRS will become a major part of the wireless component of the Global Information Grid, the DoD's global interconnected information network.

The preliminary system development and demonstration, or Pre-SDD phase, started by these contracts is used to develop system architectures and initial designs. This acquisition strategy is frequently used by the Air Force to foster innovation and maintain design competition.

"The Pre-SDD phase helps us to define an allocated baseline for radio size, weight, power, ancillary equipment and service integration kits that minimize total cost to the government while delivering a powerful new networking capability to the war fighter," said Lt. Col. Maryann

Watson, AMF JTRS program manager.

In the 11th month of the 15-month Pre-SDD phase, the program office will issue a request for proposals for the system development and demonstration phase, Colonel Watson said. This request is expected to be released in late summer 2005. A free and open competition will then be used to select the winning team for the SDD phase.

The AMF program began as two programs: one for airborne platforms managed by the Air Force and the other for maritime platforms and fixed stations managed by the Navy. In January, DoD merged the two into a single joint program office to enhance interoperability by proceeding with a single core design, Colonel Watson said.

Currently, ESC leads the program and occupies the program manager and deputy program executive officer positions while the Navy provides the deputy program manager and the program executive officer.

In the future, the Space and Naval Warfare Systems Command in San Diego will take the lead and the positions will rotate between the branches.



# Lean Mean Sustaining Machine

Kari Tilton  
OO-ALC Public Affairs

Maintainers at Hill Air Force Base, Utah, have logged themselves into Air Force depot maintenance history books, returning 97 percent of repaired jets on or ahead of schedule, with a 62 percent zero-deficiency rate upon delivery.

The Air Force has never seen these numbers in depot repair, said Col. Paul Davidson, Hill's Ogden Air Logistics Center Maintenance Directorate Aircraft Division chief.

"This is truly great news for the warfighters that we support, and impacts every MAJCOM in the Air Force, plus the Navy and Marine units that send aircraft here," he said. "It shows that Ogden and the other air logistics centers are clearly focused on meeting the needs of the warfighter."

ALCs have been a subject of criticism throughout the Air Force for years because they had a reputation for never getting things done on time, the colonel said.

This is understandable, said Dave Stevens, the division's deputy chief, considering workers sometimes had to wait several months for a part to come in, or had to walk back and forth across a hangar to get the tools one or two at a time.

In 2000, aircraft division leadership began looking closely at their processes and found many employees who had been doing things the same way for decades.

Realizing the need for extensive change to the status quo, the division looked to commercial aerospace and auto industries for a solution. It found process improvement tools like "Lean" and "Six S," helping civilian-sector companies dramatically streamline work flow, reducing turn-around time.

The division brought in several process improvement consultants. They eventually hired a long-time Lean expert to lead a small team dedicated to increasing production and went directly to employees out on the shop floors, asking them for suggestions on how to improve.

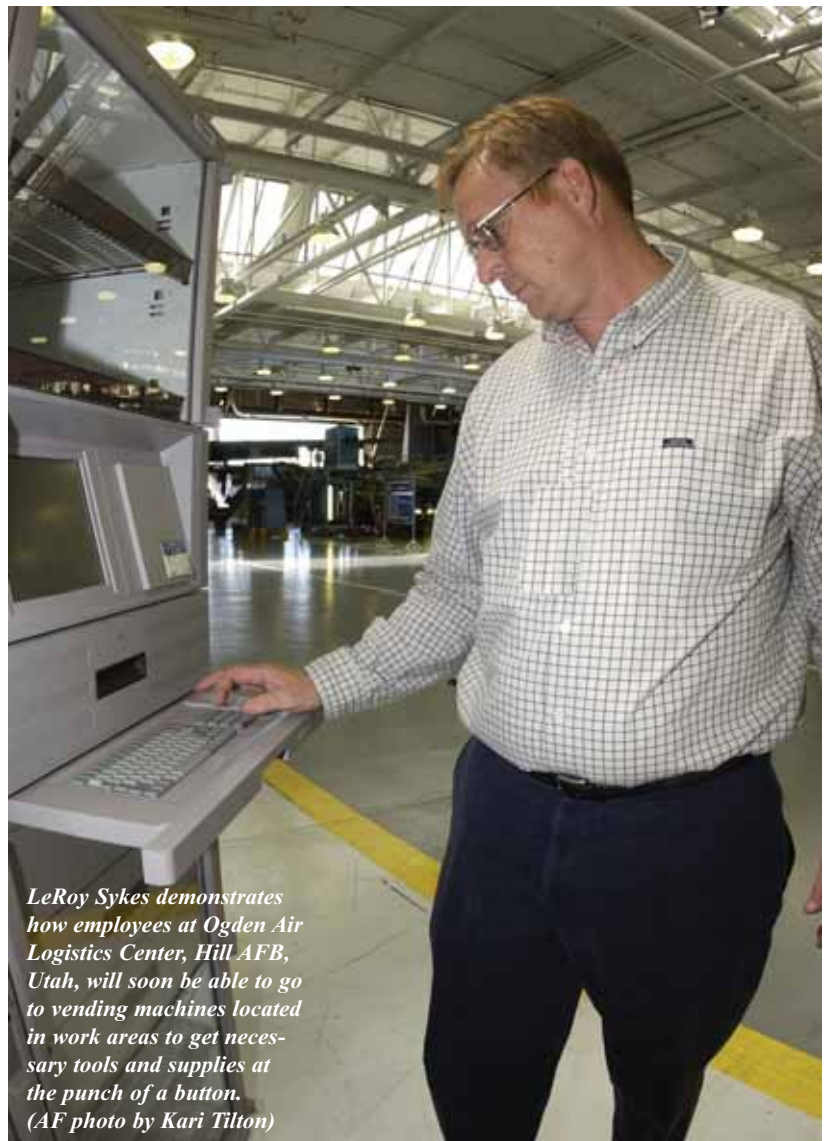
"Our maintainers know the work and they knew a better way — all we had to do was ask," Mr. Stevens said.

And the answer was straightforward. Division technicians needed parts to be more readily available, and they needed their tools and chemicals located closer to where the work was being done.

Dr. Chalon Keller, the division's process improvement chief, opened the lines of communication with outside support agencies to improve parts delivery. Now, aircraft parts and kits are getting here in advance, versus workers waiting for parts, she said.

The division also reorganized its work areas, putting tools and supplies close at hand.

For instance, vending machines are now in place in several



*LeRoy Sykes demonstrates how employees at Ogden Air Logistics Center, Hill AFB, Utah, will soon be able to go to vending machines located in work areas to get necessary tools and supplies at the punch of a button. (AF photo by Kari Tilton)*

areas and eventually will be located throughout nearly all the division's work areas, said Dr. Keller. The machines automatically restock various parts and supplies while tracking accountability. Shop employees swipe their common access identification card to get safety glasses or sanding discs and will eventually be able have automatic access to specialized tools.

The aircraft division has significantly changed the way they turn out aircraft for routine modifications and upgrades, as well. Using Lean fundamentals, such areas are now organized in "super" cells where work takes place on a strict schedule. At each cell, a new task is accomplished, readying the jet for its next stop.

Modification progress in each area is carefully tracked in order to keep the work flow on schedule. Progress charts tracking overall progress and individual milestones are set up near each cell and employees are now expected to complete specific tasks on schedule.

Also credited in the division's success is its attention to cleaning up work areas, thus making them more employee-friendly. New lighting has been added, along with a fresh coat of paint and easier-to-clean floors.

Additionally, the aircraft division has monthly focus meetings with customers to proactively discuss weak areas and address problems before they arise.

"The whole idea here is steady, incremental, monumental change," Dr. Keller said. "We're definitely on our way."



*Months of seven-day work weeks at Tinker AFB, Okla., enabled mechanics in the F100 core module shop to eliminate hundreds of mission capable work stoppages and bring the core's MICAPs to zero for the first time since 1997. Working on the core module are Dale McGirt, left, and Cimaron Haley. (AF photo by Kirk McPheeters)*

# Hitting the Mark

Jeanne Grimes  
OC-ALC Public Affairs

## Team brings engine core backlog to zero

When hundreds of mission capable work stoppages in recent years slowed production in the F100 Core Shop, officials at the Oklahoma City Air Logistics Center, Tinker AFB, Okla., aimed at what must have seemed an impossible target.

F100 core MICAP backorders topped out at 235 in March 2002 and as recently as a year ago, the number hovered around 179. MICAP, or mission capable, is a condition in which an aircraft is grounded for lack of spare parts.

They finally scored their bull's-eye — zero MICAPs — this past June.

"We kept it two days," said Col. James Diehl, Engine Division chief. "It was a high water mark we finally achieved. We've been struggling to get to zero ... and we'll stay close to it and probably bump up to zero again. But the significance is this is the first time we've gotten there since 1997. Where we were last year was pretty ugly. We're never going back to 235. We'll be six, 10, maybe 15. Twenty at the most.

"We're very proud of our role in getting there, but it took an entire enterprise. Item managers, engineers, program managers in addition to the supply and production per-

sonnel. And it took the contractors."

Think Team Tinker and bump it up a notch. Hitting the mark was the work of many, from the mechanics in MAE to forecasters and item managers in the propulsion directorate's fighter management division, representatives from the engine manufacturer and workers in the Defense Logistics Agency.

John Fernandez is chief of the F100 Core, High Pressure Turbine and Gearbox Program Management Section in LP.

"We have partnered with MAE, so we know their problems," he said. "We work issues that happen on the floor, that occur in the support side and the availability of parts."

According to Sam Villareal, F100 Section chief, mechanics must work more than 500 production hours on the engine's core. There are 150 mechanics assigned to the section, including 38 who were brought in to provide relief for the crew that has worked seven-day weeks for many months.

Brandon Zilem has 12 years experience working the F100 engine core, first in the military and then as a civilian. He knew the zero mark would be hit one day "as long as we could keep the parts coming

in."

"It's been real hectic the last six to eight months," he said, "because we were close to zero MICAP status and they wanted us to get there."

Another factor, according to Col. Diehl was the use of kitting.

"We've gone to an industrial prime vendor ... and our stockage rate has moved from about 65 percent to 99.8," he said. "That quantum leap in availability has allowed us to produce more cores."

The team hit several speed bumps in the form of "quality escapes" in engine parts furnished by a contractor, according to Col. Diehl. That dealt a significant increase in workload for the maintainers.

"When there's a part that's bad and safety analysis says remove the part from service, all the cores have to come back and be changed out," the colonel said, comparing it to an automobile manufacturer's recall. "And we've been doing that for a couple of years."

In addition, two contracts with firms to produce the core modules ran out months ago.

"And we assumed the added responsibility of producing those cores also," Col. Diehl said, adding the workload here now



is well over 500 core modules. "There are thousands of parts and the standards are set real high. You can't have a breakdown. When a part does not meet standards, it takes a while to produce a replacement part and then to get all the engines back and change out that part."

By taking an historical look at parts usage in MAE and things like fallout rates on the floor, Mr. Fernandez and his staff are able to predict future needs.

"It's a team effort; we're working on huge systems," he said, adding the majority of parts required for work on the F100 core are consumables provided through DLA.

As program managers, Mr. Fernandez and others "ensure the different aspects of logistics work together" by projecting parts shortages and helping the entire team prioritize efforts.

"Output is always paced by that weakest link," he said. "We always live in terror of that next surprise. We have to compete with the rest of industry for materiel."

"The team works very well with DLA because we're better at forecasting our usage. I think we have the best forecasting in the Air Force, possibly in the Department of Defense."

Doug Almgren, Tinker Customer Team on-site liaison for the DLA, said the forecasting of consumable items is very important.

"Particularly when past demands don't tell the whole story of how many of what items to buy in the future," he explained.

To help, DLA assigned a weapons system support manager and put together customer teams focused on supporting Tinker on the F100 and other weapon systems produced here.

"I am a member of that team and happen to be stationed here at the ALC," Mr. Almgren said. "But there are numerous DLA-related people who support Tinker, from our item managers/buyers who procure the items, to the warehouse clerks who process receipts, to our industrial prime vendor contractor who supports the shops directly with bench stock items."

"DLA is focused on the mission and on helping Team Tinker support the warfighter."

"The Defense Logistics Agency is proud to be a part of this milestone. It is not because of any one person but a myriad of people, both from the DLA and the Air Force. We worked diligently with assertiveness and foresight to achieve this goal. When it comes right down to it, it was just simple 'grunt' work on everyone's part," said DLA's Craig Eaton, weapons systems support manager for the F100 series of engines.

Mr. Fernandez said successful long-range forecasting "all goes to the accuracy of the bill of materiel."

While the bill of materiel is built to order the least preferred parts, forecasting reflects the more preferred parts.

"Change is always happening," he said. "The bill of materiel maintenance used to order parts is different from the bill of materiel we use to fore-

cast."

The biannual forecast meetings have been a staple for four years. Each such meeting for the F100 core requires three weeks and includes input from the mechanics who are most familiar with core and any problems in depot.

"When we first started do to these, they were not a very popular process," Mr. Fernandez said.

In time, however, the mechanics began to see the benefits.

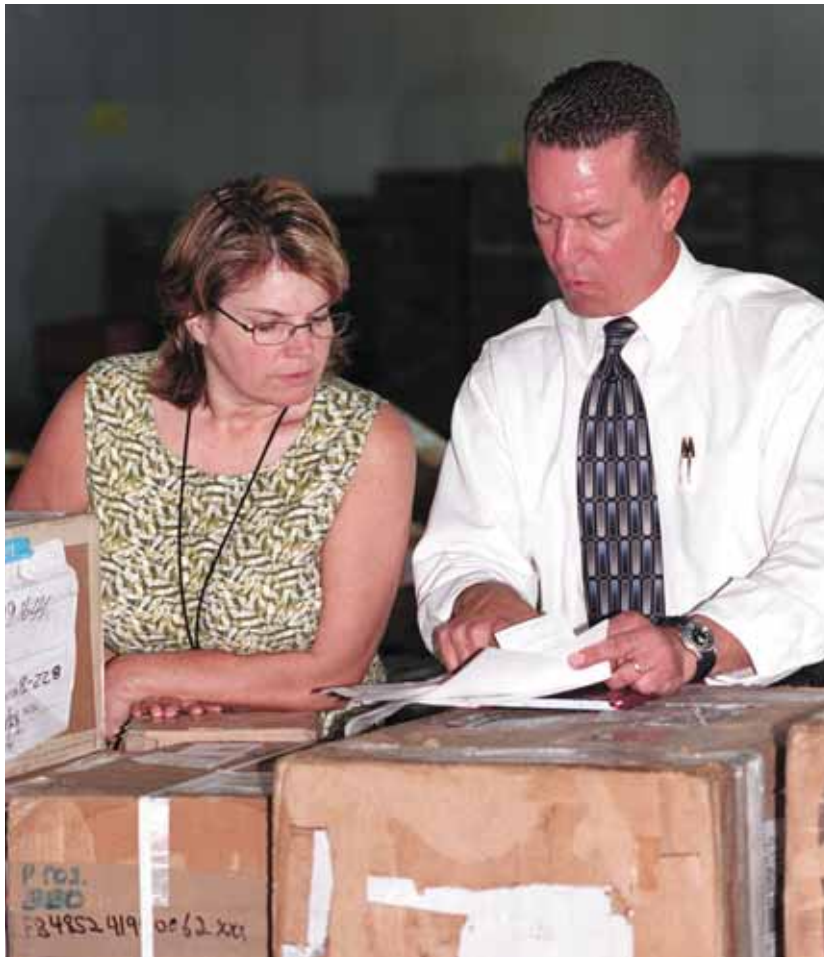
"It's fostered a lot of teamwork," Mr. Fernandez said.

"Now the members look forward to the meetings. They've taken ownership of the process. It's never been easy, but it's turning into a beautiful thing."

After seeing the results, others are noticing the benefits, too. One of the team's biggest supporters, Oklahoma City Air Logistics Center Commander Maj. Gen. Terry L. Gabreski, said, "This is absolutely a tremendous effort by the entire F100 team."

"Our center exists for one reason and one reason only — to deliver war-winning capabilities to the warfighter. This is a perfect example of team work and innovative thinking making a huge difference and giving front line warfighters what they need. I am very proud of the team's accomplishment."

*Doug Almgren, right, Defense Logistics Agency's Tinker Customer Team on-site liaison, and Deborah Lashley, DLA customer service supply technician, discuss the thousands of consumable repair parts DLA furnishes to the Oklahoma City Air Logistics Center for the F100 core module. (AF photo by Margo Wright)*





# AFMC Warfighters

## Medics deploy to Dominican Republic

Al Eakle  
74th MDG Public Affairs

**M**ention the word “deployment” and for many, thoughts turn to the Middle East and America’s war on terrorism. For a small group of medics from the 74th Medical Group, Wright-Patterson Air Force Base, Ohio, it meant an opportunity to help less fortunate people residing on an island in the Caribbean through a State Department aid program.

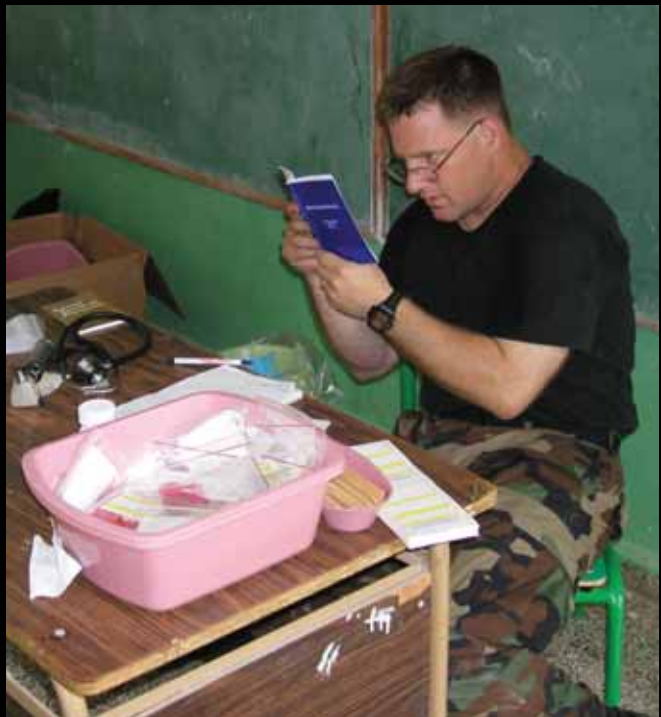
A team comprised of 15 medics from Wright-Patterson AFB and one from Eglin AFB, Fla., traveled to the Dominican Republic to provide humanitarian medical care during the last half of July. They included two internal medicine, two pediatric, and one obstetric and gynecology doctors, a dentist, optometrist, public health officer and eight medical technicians.

“This humanitarian mission provided us an opportunity to see and treat illnesses which we do not usually see in the United States,” said Col. (Dr.) Gregory J. Toussaint, 74th Medical





*Col. (Dr.) Gregory J. Toussaint, director of staff and team leader, counts out medication for his young patients. He, along with Capt. (Dr.) Cassandra Burns, were deployed to the Dominican Republic from the 74th Medical Operation Squadron, located at Wright-Patterson AFB, Ohio. During the mission, the two pediatricians saw 2,601 young patients. (AF photo by Maj. Chad Demott)*



*Capt. (Dr.) David Call, an internal medicine resident from the 74th Medical Operations Squadron, brushes up on Spanish medical terms. (AF photo by Maj. Chad Demott)*

diagnosis’.”

The team lived at a Dominican Republic Army post, spending 10 days treating people in six different villages.

The daily average number of patients seen was 1,167. This included 549 in pediatrics, 353 in general medicine, 136 in OB/GYN, 53 in dental, and 76 in optometry.

Overall, they saw 8,987 patients during their visit. This included 2,601 in pediatrics, 2,906 in general medicine, 983 in OB/GYN, 500 in dental and 504 in optometry.

The team also had an opportunity to talk directly to the U.S. Ambassador to the Dominican Republic, Hans Hertell, who visited their work site in the town of Jimani, which was ravaged by floods in May.

“This medical mission made me a more compassionate and caring individual,” said SrA. Susie Chairez, a surgical technician assigned to the 74th Surgical Operations Squadron. Her pri-

Group director of staff and team leader. “We took people who have never done this before, and gave them the opportunity to work in austere medical conditions, without a laboratory or X-ray, instead relying on clinical

mary job was to translate between the doctor and OB/GYN patients.

“I set up the room every day, gave shots, washed sheets and pillow cases in between visits, served as a chaperone and assisted (Lt. Col.) Dr. (John) Fischer with patient education.”

Airman Chairez said she also rotated to the pediatric and optometry teams to translate when GYN had no patients.

“I think the one experience that I’ll remember most is when a set of twins, 73 year old ladies, came in complaining of poor vision,” said SSgt. Adam T. Sauls, an optometry technician in the 74th Aerospace Medicine Squadron. “We saw both of them, and they had an average distant vision of 20/400, which is bad.

“We found some glasses that were the correct prescription for them. When they put them on, and could see down to the 20/25 line on the chart, they were jumping up and down with excitement, thanking us over and over, and thanking God for bringing us to their town.”

Both the team leader and dental officer had high praise for everyone on the team.

“The greatest reward was seeing a team of 16 medics, placed in rather austere conditions and faced with multiple obstacles, pull together to accomplish the mission,” said Col. (Dr.) Robert R. Burnett, chief of periodontics for the 74th Dental Squadron. “It was synergism at its best; in this case the whole was greater than the sum of the parts.”



# Hurricane

## Wreaks havoc at Eglin, but...



*Hurricane Ivan rocked the eastern coastline near Eglin Air Force Base, Fla., on Sept. 16. The storm smashed facilities and flooded the streets. Water filled the base exchange parking lot pictured above. Fortunately for victims of the storm, another AFMC base opened its doors. Evacuees sought shelter at Robins AFB, Ga., where volunteers set up cots in the fitness center shown below, helping nearly 200 displaced students from Eglin's explosive ordnance school. (AF photos)*





# Ivan

## ...reaps rewards for Edwards' testers

Capt. Catie Hague  
95th ABW Public Affairs

Experts at Edwards Air Force Base, Calif., battled 155 mph winds and penetrated two hurricanes 15 times to put the WC-130J's improved weather radar system to the test.

Together with Air Force Reserve Command's 53rd Weather Reconnaissance Squadron members from Keesler AFB, Miss., joint test team experts flew multiple times into Hurricanes Ivan and Jeanne to test the WC-130J's weather radar system. It's designed to take weather avoidance software to the next level ... weather reconnaissance, according to Mark Miller, 418th Flight Test Squadron project engineer.

The WC-130J Hercules is a special weather reconnaissance version of the new Lockheed Martin C-130J cargo plane. Its mission is to fly into the eye of hurricanes to retrieve critical information about active storms; 53rd WRS members have the mission stick.

According to Mr. Miller, the tests were part of the final development phase planned for the WC-130J weather radar conversion and validated work done in June to fine tune the radar and prepare for hurricane penetration missions.

"Currently, the C-130J's weather radar can't penetrate the high-density rain fields characteristic of hurricane conditions," said Maj. Clifton Janney, 418th FLTS project pilot and WC-130J flight commander. "This weather avoidance radar operates outside the hurricane and looks in."

With the new software modification, the low-powered reconnaissance radar can investigate the storm from within, collecting data on the winds and direction of the hurricane and provide real-time information to the National Hurricane Center in Miami, Fla., Mr. Miller said.

"Flying through the storm, the reconnaissance weather officer gives direction to the pilot based on the winds he's seeing on radar," said Major Janney. "What he's trying to do is fix the center position of the hurricane where there's no wind or very light wind. This is called a fix mission; we fly through the eye to fix the center of the hurricane."

He said the radar is used to find the eye and fine tune that position based on the winds. This fixed position is what the NHC uses to determine the path of the hurricane, as well as its speed.

Although only the initial results are in, Major Janney said the radar pictures he saw were very good.

"We did find an anomaly and can't tell if it's in the hardware

or software," he said. "That needs to be run down before we know how well the improved radar system performed. We think we have the correct solution, but we need additional verification, validation of the data, to determine our final test results."

In addition to the radar modification testing, the team also flew a new propeller modification – a propeller with metal covers on the leading edge to protect its de-icing equipment, Mr. Miller explained.

"In order to complete this supplementary testing, we had to seek out extremely heavy rain and hail," he said.

Preliminary results show that the propeller performed quite well, he said.

Overall, the WC-130J accomplished its hurricane fix mission, proving the test team successful.

"Captains Chris Elenbaum and Melissa Cooper [418th FLTS test conductors] really had to do some hard work to make all this happen on time," said Major Janney. "And Larry Harjes, our test conductor during the flight portions of the test, did a tremendous job modifying the radar in flight and collecting data for each test point."

As Major Janney stated, "there are some things that still need to be investigated like lightening certification, but we are very close to a workable solution. We are right on the cusp of having all the answers and will soon be able to send this aircraft on its way to operationally support the 53rd's 'Hurricane Hunter' mission; a replacement airframe for their C-130H models."

The WC-130J will provide the 53rd WRS crews a more reliable aircraft and ultimately increase mission effectiveness, said Major Janney. Once in place, crews will use the WC-130J to conduct weather reconnaissance for hurricanes in the fall and storms in the winter. Until then, the aircraft will continue radar testing and supporting the NHC by providing vital storm atmospheric information throughout the 2004 hurricane season.

*The WC-130J flies over the Atlantic Ocean near the outer portion of Tropical Storm Jeanne at 1,500 feet in mid-September. The force of the winds caused white-water waves. (AF photo by Mark Miller)*



# Spreading self-defense savvy

1st Lt. Caroline Wellman  
OO-ALC Public Affairs

A Security Forces Airman at Hill Air Force Base, Utah, recently proved the utility of new Integrated Self-Defense (ISD) training after he used skills he had been taught in the training to apprehend a suspect.

"I helped the individual exit his vehicle by using a technique called the gooseneck," said Staff Sgt. Jason Leap, a criminal investigator with the investigations division of the 75th Security Forces Squadron.

The gooseneck is a maneuver performed on the hand and wrist, bending and twisting each in opposite directions until the position resembles a goose's neck.

"It was after my second day of my ISD training," Sergeant Leap said. "I was in this situation, and I thought about the techniques I had been learning so I used them. I wish I would have had this training nine years ago when I first joined the Air Force. I can already see its utility."

Integrated Self-Defense Training was developed by Maj. Doug Ballinger, 75th Security Forces Squadron commander, with the support of the former 75th Air Base Wing commander, Col. Seb Romano, and martial arts instructor Manuel Taningco, the founder and master instructor of Tama Martial Arts Center in Ohio's Miami Valley.

Major Ballinger identified the emerging need for his troops to have hand-to-hand combat skills in their forward-deployed missions — running convoys, convoy security and participation in quick reaction forces.



*Martial arts instructor Manuel Taningco, right, shows two Airmen a self defense move at Hill AFB, Utah. (AF photo by Airman 1st Class Micah Garbarino)*

After reviewing terrorist training manuals, talking with returning deployed security forces personnel and familiarizing himself with the Marine Corps Martial Arts Program, Major Ballinger, a life-long martial arts student, began exploring the possibility of developing a similar self-defense training program for Airmen at Hill AFB.

"Convoy missions are some of the most visible and predictable movements the military does," said Major Ballinger. "Since we know the risks, we need to give our Airmen the option of close-in self defense when weapons fail

or when the enemy is too close to engage with a firearm."

"Most terrorists have been trained in hand-to-hand combat, and experience has shown us that they can employ deadly or crippling techniques," said Richard Bolin, chief, Ogden Air Logistics Center Intelligence Division. "ISD arms our Airmen to counter this threat."

While the training program is designed to help Airmen protect themselves when faced with potentially deadly situations while deployed, it is also finding use in daily law enforcement, as Sergeant Leap can attest.

The techniques Master Taningco instructs are useful when something more than pepper spray, but less than a club, is needed to handle a suspect, said Staff Sgt. Steven Richardson, 75th Security Forces Squadron. "They're techniques we learn in technical school, but ... we never get training on them again."

Airmen who have been involved in the training credit Master Taningco for their new preparedness.

"Master Taningco is beyond qualified to teach ISD to the Airmen here, or across the Air Force," said Sergeant Leap. "He's a very comprehensive instructor, who knows how to get the most out of a student and make learning the techniques fun."

Master Taningco's program incorporates defensive martial arts principles and theory with the practice and mechanics of combat-effective techniques. The program covers how to counter various attack methods through defensive footwork, locks, throws, the use of edged weapons, and grappling.

More than 155 personnel from the 75th Air Base Wing and 388th Fighter Wing at Hill AFB already have completed this training.

75th Air Base Wing leadership hopes that the program will become self-sustaining in a year with the qualification of local instructors. Major Ballinger intends to complete Colonel Romano's directive to train all 75 ABW personnel as part of their pre-deployment training.

"It's essential training and hopefully it'll become a required program," Sergeant Leap said.

"It needs to go Air Force wide."



# Rare researcher

Ranney Adams  
AFRL Public Affairs

Youngest doctoral student in the nation studies at AFRL

**A**ir Force Research Laboratory experts at Edwards Air Force Base, Calif., routinely host college students at their facilities to give them a taste of what scientists and engineers do for the military, hoping to harness their talents after graduation.

So their hosting Alia Sabur for summer research shouldn't really be any different — except for the fact she's only 15 years old and pursuing her doctorate in nanotechnology at Drexel University in Philadelphia.

The nation's youngest doctoral student, Alia graduated summa cum laude from New York State University at Stony Brook with her Bachelor of Science degree in applied mathematics when she was 14 years old.

Her doctoral studies, summer research at AFRL's Edwards Research Site and introduction to the Air Force's world of scientific research and development come courtesy of a National Defense Science and Engineering Graduate Fellowship.

In addition to AFRL's Air Force Office of Scientific Research paying her tuition and fees, she also receives a monetary stipend for the duration of her studies.

An important part of the lab, AFOSR experts oversee Air Force fundamental or basic research efforts across the nation at

universities and lab facilities. There are also research efforts supported through AFOSR's European and Asian offices.

Lab officials hope Alia's extended visit to AFRL's rocket propulsion technology research facilities this summer will provide an orientation to the broad spectrum of research and development pursuits being conducted at

Edwards AFB.

And Alia's hope is to contribute to those efforts.

"I hope my research (this summer) will provide an introduction to the cutting edge research taking place at Edwards," Alia said. "The (Rocket Lab) folks are really friendly and enthusiastic. They really enjoy what they are doing."

Earlier this year, Alia told Associated Press reporters that her scientific pursuit is "the study and creation of electronic devices using optics, at the nanoscale."

Experts said the study area, known as NanoPhotonics, is a very promising research area for extremely small devices useful for unlimited scientific and medical applications.

Identified as a prodigy at the age of 8 months when she began reading and talking, Alia was enrolled in college at age 10 to pursue her engineering degree. She was the youngest female to graduate from college last year.

In addition to her academic studies, Alia is a prodigy in the musical arena as well, claiming her passion for science is as important as her passion for music. She is noted for her musical abilities with the clarinet and has been playing with orchestras since she was 11. She studies with Ricardo Morales, the Philadelphia Orchestra's principal clarinetist.

For her personal enjoyment, Alia said she likes Broadway shows, magic and music that range from classical to blues and jazz. Practicing her clarinet for three hours every day, she also welcomes the opportunity to perform in musical concerts.

When asked about encouraging other young women to enter the sciences, Alia said, "Girls are afraid of being perceived as nerds or dweebs. I try to show that you can be normal, have friends and not act like a dweeb."

*Alia Sabur poses in her official AFRL lab coat. The fifteen year-old physics phenom, spent her summer doing research at Edwards AFB, Calif. In addition to her intensive academic pursuits, Miss Sabur, a concert clarinetist, finds time to practice three hours a day. (AF photo)*





### **WELCOME HOME!**

Capt. Henry Spradlin, staff nurse anesthetist with the 74th Medical Operations Squadron at Wright-Patterson AFB, Ohio, kisses his wife Stacie while oldest daughter Annaliese gives them both a hug during an emotional homecoming Sept. 15. The captain had just returned from a 90-day deployment to Iraq. He was among nearly 75 medics from AFMC's 74th Medical Group who deployed. (AF photo by Maj. (Dr.) Rocky Reston)

# **AFMC**